

CH EN 5305, Air Pollution Control Engineering

Spring 2009

Homework Assignment 4

Prof. Geof Silcox

Due Friday, 2009 February 6, by 17:00

To ensure that you receive full credit for your solutions, write out all equations in symbolic form, give numerical values for all variables and constants in the equations, and write answers to conceptual problems in complete sentences. Approximate answers include only one significant figure. You should report your answers with three.

Chapter Six Problems

1. Problem 6.1, p. 152 of text.
2. Please examine Equations 6.19-6.21 on p. 130. For each equation, what are the units on concentration? Please modify each equation, if necessary, so that standard units of concentration appear (e.g., mass or moles per length³) and make any necessary changes in Figure 6.6, page 131. In making your changes, define A to be the cross-sectional area of the strip in Figure 6.6a and define L to be the thickness of the sheet in Figure 6.6b.
3. Problem 6.5, p. 153 of text.
4. Problem 6.16, p. 154-155 of text.
5. Problem 6.14, p. 154 of text. Approximate answers: $c_{\max} = 4000 \mu\text{g}/\text{m}^3$, $x = 0.7 \text{ km}$.